WHAT IS CLAIMED IS:

1. A toroidal continuously variable transmission comprising:

input and output disks coaxially arranged and opposing each other;

a power roller interposed between the input and output disks under axial preload, the power roller comprising a power-roller inner ring kept in contact with the input and output disks, a power-roller outer ring receiving a contact pressure transferred from the input and output disks to the power-roller inner ring under the axial preload, and a power-roller bearing interleaved between the power-roller inner and outer rings;

a power-roller support comprising a trunnion having a power-roller accommodating portion that supports the power roller to permit a tilting motion of the power roller about a trunnion axis perpendicular to a rotation axis of the power roller;

a roller-and-cage bearing assembly interleaved between the power-roller outer ring and the power-roller accommodating portion to permit a parallel translation of the power roller in an axial direction of the input and output disks, the roller-and-cage bearing assembly comprising:

(a) a cage formed with a plurality of roller holes, and

(b) a plurality of rollers respectively mounted in the plurality of roller holes,

the cage having a portion defining a slotted hole; and

a protruded portion attached to the power-roller accommodating portion so that the protruded portion extends from the power-roller accommodating portion

toward the cage in a direction of the rotation axis of the power roller;

wherein the slotted hole and the protruded portion are loosely fitted to each other to define a predetermined clearance between the slotted hole and the protruded portion, the predetermined clearance being determined to permit a set displacement of the roller-and-cage bearing assembly relative to the trunnion in a direction perpendicular to both the rotation axis of the power roller and the trunnion axis.

2. The toroidal continuously variable transmission as claimed in claim 1, wherein the power-roller support comprises a power-roller support base surface on which the power-roller outer ring is supported, and which further comprises:

(i) a first lubricating oil supply port formed in the power-roller support base surface;

(ii) a second lubricating oil supply port formed in a back face of the power-roller outer ring;

(iii) a lubricating oil supply pipe intercommunicating the first and second lubricating oil supply ports;

(iv) a disk-shaped member mounted on the lubricating oil supply pipe to prevent lubricating oil leakage; and

(v) an escape hole formed in the cage for escaping and protruding the disk-shaped member toward the back face of the power-roller outer ring,

wherein the predetermined clearance is a clearance defined between the disk-shaped member and the escape hole in a direction perpendicular to both the rotation axis of the power roller and the trunnion axis.

3. The toroidal continuously variable transmission as claimed in claim 2, wherein the escape hole comprises an oval slotted hole formed in the cage, and

wherein the disk-shaped member is coaxially arranged on the lubricating oil supply pipe and loosely fitted into the oval slotted hole to limit the displacement of the roller-and-cage bearing assembly in the direction perpendicular to both the rotation axis of the power roller and the trunnion axis to the set displacement, while inhibiting a displacement of the roller-and-cage bearing assembly along the trunnion axis.

4. The toroidal continuously variable transmission as claimed in claim 1, wherein the slotted hole has an oval slope and comprises a flat portion.

5. The toroidal continuously variable transmission as claimed in claim 4, wherein the flat portion extends in a direction that is perpendicular to both the rotation axis of the power roller and the trunnion axis and wherein the dimension of the flat portion corresponds to the predetermined clearance.

6. A toroidal continuously variable transmission comprising:

input and output disks coaxially arranged and opposing each other;

a power roller interposed between the input and output disks under axial preload, the power roller comprising a power-roller inner ring kept in contact with the input and output disks, a power-roller outer ring receiving a contact pressure transferred from the input and output disks to the power-roller inner ring under the

axial preload, and a power-roller bearing interleaved between the power-roller inner and outer rings;

a power-roller support comprising a trunnion having a power-roller accommodating portion that supports the power roller to permit a tilting motion of the power roller about a trunnion axis perpendicular to a rotation axis of the power roller, the power-roller accommodating portion comprising:

(a) a power-roller support base surface;

(b) a pair of upper and lower inner wall surfaces; and

(c) a pair of sloped surfaces each interconnecting the power-roller support base surface and either of the upper and lower inner wall surfaces;

a roller-and-cage bearing assembly interleaved between the power-roller outer ring and the power-roller accommodating portion to permit a parallel translation of the power roller in an axial direction of the input and output disks, the roller-and-cage bearing assembly comprising:

(a) a cage formed with a first group of roller holes that is closely juxtaposed to each other in a direction perpendicular to both the rotation axis of the power roller and the trunnion axis and facing a first sloped surface of the pair of sloped surfaces and a second group of roller holes that is closely juxtaposed to each other in a direction perpendicular to both the rotation axis of the power roller and the trunnion axis and facing a second sloped surface of the pair of sloped surfaces; and

(b) a first group of rollers mounted in the first group of roller holes and a second group of rollers mounted in the second group of roller holes to receive both a force component acting on the power roller in a

direction of the rotation axis of the power roller and a force component transmitted from each of the input and output disks to the power roller and acting in a direction of the trunnion axis;

wherein the cage comprises a portion defining a slotted hole;

a protruded portion attached to the power-roller support base surface of the power-roller accommodating portion so that the protruded portion extends from the power-roller support base surface toward the cage in the direction of the rotation axis of the power roller;

wherein the slotted hole and the protruded portion are loosely fitted to each other to define a predetermined clearance between the slotted hole and the protruded portion, the predetermined portion being determined to permit a set displacement of the roller-and-cage bearing assembly in a direction perpendicular to both the rotation axis of the power roller and the trunnion axis, while defining a lesser clearance along a direction of the trunnion axis.

7. The toroidal continuously variable transmission as claimed in claim 6, further comprising:

(i) a first lubricating oil supply port formed in the power-roller support base surface;

(ii) a second lubricating oil supply port formed in a back face of the power-roller outer ring;

(iii) a lubricating oil supply pipe intercommunicating the first and second lubricating oil supply ports;

(iv) a disk-shaped member mounted on the lubricating oil supply pipe to prevent lubricating oil leakage; and

(v) an escape hole formed in the cage for escaping and protruding the disk-shaped member toward the back face of the power-roller outer ring,

wherein the predetermined clearance is a clearance defined between the disk-shaped member and the escape hole in the direction perpendicular to both the rotation axis of the power roller and the trunnion axis.

8. The toroidal continuously variable transmission as claimed in claim 7, wherein the escape hole comprises an oval slotted hole formed in the cage; and

wherein the disk-shaped member is coaxially arranged on the lubricating oil supply pipe and loosely fitted into the oval slotted hole to limit the displacement of the roller-and-cage bearing assembly in the direction perpendicular to both the rotation axis of the power roller and the trunnion axis to the set displacement, while inhibiting a displacement of the roller-and-cage bearing assembly along the trunnion axis.

9. The toroidal continuously variable transmission as claimed in claim 6, wherein the first and second groups of rollers of the roller-and-cage bearing assembly are symmetrical with respect to the rotation axis of the power roller; and

wherein the rotation axis of the power roller is perpendicular to a flat plane of the power-roller support base surface.